



# Coal Mine Safety and Health

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## Summary

Fatal injuries associated with coal mine accidents fell almost continually between 1925 and 2005. In 2006, however, the number of fatalities more than doubled to 47, which prompted the 109<sup>th</sup> Congress to enact the Mine Improvement and New Emergency Response Act (MINER, P.L. 109-236). Fatalities declined in subsequent years and dropped to a low of 18 in 2009. After the deaths of 29 coal miners at Massey Energy's Upper Big Branch (UBB) mine in West Virginia on April 5, 2010, the 111<sup>th</sup> Congress turned its attention to the issue of mine safety.

In the wake of the methane explosion at Sago mine in West Virginia in January 2006, the Mine Safety and Health Administration (MSHA) was criticized for its slow pace of rulemaking earlier in the decade. MSHA standard-setting activity quickened after enactment of the MINER act in June 2006. The amendment of the 1977 Mine act emphasized factors thought to have played a role at Sago and other recent incidents, and imposed several rulemaking deadlines on MSHA. The agency published all the requisite final standards except one: the MINER act required that, by June 15, 2009, two-way wireless communications systems and electronic tracking systems be part of emergency response plans (ERPs). In January 2009, MSHA issued a letter stating that "because fully wireless communications technology is not sufficiently developed at this time, nor is it likely to be technologically feasible by June 15, 2009 ... [n]ew ERPs and revisions to existing ERPs should provide for alternatives to fully wireless communication systems."

Some Members characterized passage of the MINER act as a first step. In 2008, the House passed the Supplemental Mine Improvement and New Emergency Response Act (S-MINER) as amended. Some of the bill's provisions addressed issues that arose from the Crandall Canyon Mine incident in Utah in August 2007. S-MINER was opposed by the Bush Administration.

In 2010, one issue policymakers have focused on is the greatly increased number of citations for violations being contested by mine operators. The UBB mine incident brought to public attention the potential implications for miner safety of operators appealing to the Federal Mine Safety and Health Review Commission (FMSHRC) penalty assessments proposed by MSHA. Through publication of an interim rule and a notice of proposed rulemaking in spring 2010, FMSHRC intends to speed its civil penalty proceedings and thereby more quickly issue final orders that MSHA can include when determining whether a mine should be placed in pattern of violations (POV) status. The Miner Safety and Health Act of 2010 (H.R. 5663), introduced on July 1, includes provisions changing POV criteria as well as withdrawing all persons from coal or other mines in POV status and doubling the number of mandated inspections at those mines. The bill also defines in statute significant and substantial mine safety and health violations, strengthens whistleblower protections for miners and other workers covered by the Occupational Safety and Health Act (OSH Act), and amends civil and criminal penalty provisions in the Mine act and the OSH Act. H.R. 5663's amendment of the OSH Act is similar to provisions in the Protecting America's Workers Act (H.R. 2067, S. 1580). The Committee on Education and Labor held a hearing on the bill on July 13, 2010.

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**N**ews accounts of miners losing their lives as a result of accidents at underground coal mines have appeared more often in recent years. The methane explosion in 2006 at West Virginia's Sago mine, in which 12 trapped miners died, shined a bright light on working conditions at the nation's coal mines. The partial collapse in 2007 at Utah's Crandall Canyon mine further drew attention to the plight of coal miners who work underground. These, among other incidents through 2007, prompted Congress to step up its legislative and oversight activities with respect to the safety and health of those who toil in the country's coal mines. The 29 fatalities that occurred on April 5, 2010, at West Virginia's Upper Big Branch (UBB) mine have led the 111<sup>th</sup> Congress to turn its attention to the working conditions of the nation's coal miners.

This report begins by reviewing the record of working conditions in the coal mining industry. It then describes the regulatory regime of the U.S. Department of Labor's Mine Safety and Health Administration, incorporating discussion of the standard-setting required by the Mine Improvement and New Emergency Response Act of 2006. The practice in recent years of mine operators contesting a greatly increased number of MSHA-proposed penalties for safety and health violations is next discussed in relation to the record at the UBB mine prior to the explosion. The report closes with an examination of legislative initiatives in the 110<sup>th</sup> Congress and the 111<sup>th</sup> Congress.

## **Working Conditions in the Coal Mining Industry**

### **Safety**

Safety in the coal mining industry is much improved compared to the early decades of the 20<sup>th</sup> century, a period in which hundreds of miners could lose their lives in a single accident and more than 1,000 fatalities could occur in a single year. Fatalities associated with coal mine accidents fell almost steadily between 1925 and 2005, when they reached an all-time low of 23.<sup>1</sup>

Nevertheless, coal mining remains one of the most dangerous employment sectors as measured by fatal work injuries. The fatality rate among persons employed in the private sector was 3.7 per 100,000 full-time equivalent employees (FTEs) in 2008, the latest year for which data are available from the U.S. Bureau of Labor Statistics (BLS). In contrast, 18.1 fatalities per 100,000 FTEs were recorded across all segments in the mining industry in that year. In terms of non-fatal accidents, mining does not diverge greatly from the all-industry average. In what follows, then, the concentration is on fatal accidents.

A variety of factors may have contributed to the long-term improvement in safety at the nation's coal mines (e.g., decreased employment, shift from underground to surface mining, and increased productivity). New machinery such as longwall systems not only reduced the total number of workers needed, but also did so at the most dangerous spots (e.g., the active cutting face). Other measures that likely have prevented many large-scale accidents include controlling coal dust, monitoring methane gas (which is both explosive and poisonous), adequately supporting roofs, and avoiding spark-producing equipment.

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<sup>1</sup> Data available at <http://www.msha.gov/stats/centurystats/coalstats.asp>.

It would be very difficult to determine conclusively how much of the progress in safety has been due to the activities of the Mine Safety and Health Administration (MSHA). Much of the industry might have voluntarily adopted the safety requirements in MSHA standards (regulations) without that inducement. And indeed, safety increased for a long time before Congress passed the Federal Mine Safety and Health Amendments Act of 1977 (P.L. 95-164) in which MSHA was established within the Department of Labor.<sup>2</sup>

Despite the progress made in worker safety and their disagreement on the specific course of action to be followed,<sup>3</sup> labor and management concur that there is still room for improvement—especially in light of incidents that occurred within the past 10 years. For example, the flooding of the Quecreek mine in Pennsylvania in July 2002 raised questions about the accuracy of underground mine maps and their availability to operators of nearby mines. The Quecreek accident might have been avoided if the mine operator had access to the final map of a nearby abandoned mine that had since filled with water.

In January 2006, a methane explosion at West Virginia's Sago mine, which was precipitated by lightning that penetrated underground, killed one miner initially. Twelve of the 16 miners who survived the explosion became trapped and succumbed ultimately to carbon monoxide from the ensuing fire. The episode raised a number of safety issues that were discussed at a hearing of the Senate Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies in January 2006, including the possibility that different communication and tracking devices might have enabled the trapped miners to escape or find better refuge, or rescuers to reach them more quickly. In addition, emergency breathing apparatus issued to the miners were rated for only one hour and a number of the apparatus reportedly did not work well. There also was criticism of the fact that it took 11 hours from the explosion until rescuers entered the mine.<sup>4</sup>

Accidents at Sago and other coal mines in 2006 more than doubled the number of fatalities from 23 in 2005, to 47 in 2006, a level last reached in 1995. (See **Table 1.**) Until the death of 29 miners at the UBB mine in West Virginia on April 5, 2010, the number of fatal work injuries declined steadily and fell to 18 in 2009.

Despite the improvement shown in 2007, the collapse at Utah's Crandall Canyon mine in August of that year—which resulted in deaths of six miners and three rescuers and injuries sustained by six others—again highlighted the risks of working in underground coal mines. Rescuers repeatedly sent messages on pager-like devices to the trapped miners, but it is unknown whether they ever were received. As mentioned in connection with the Sago tragedy, other technologies might have allowed communication with and location tracking of the miners.

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<sup>2</sup> In prior decades, Congress initiated and gradually expanded safety and health regulation of coal and other mining industries within the Department of the Interior.

<sup>3</sup> The United Mine Workers (UMW) union has wanted MSHA to be more active. It has for some time asserted that there are not enough inspectors and that penalties (proposed and negotiated) are not large enough. In general, the UMW would make enforcement of standards the highest priority. The mining industry generally has supported the regulatory approach that characterized much of the current decade. It has urged that inspections be focused on mines with evident problems rather than on all mines, as required by law.

<sup>4</sup> Ironically, one of the “lessons learned” from a September 2001 accident at Alabama's Jim Walter No. 5 mine appears to have led to the delay at Sago. Because most of the victims in the earlier accident were responding to a relatively small explosion when a larger one occurred, considerable time was taken to verify the state of the atmosphere in the Sago mine before rescue teams were sent in.

**Table 1. Number of Fatalities and Fatal Injury Rate in the Coal Mining Industry, 1995-2009**

Year	Number of Fatalities	Fatal Injury Rate (reported injuries per 200,000 hours worked)
1995	47	0.04
1996	39	0.03
1997	30	0.03
1998	29	0.03
1999	35	0.03
2000	38	0.04
2001	42	0.04
2002	27	0.03
2003	30	0.03
2004	28	0.03
2005	23	0.02
2006	47	0.04
2007	34	0.03
2008	30	0.02
2009	18	0.01

Source: U.S. Department of Labor, Mine Safety and Health Administration.

## Health

Accidental injuries can be quantified much more reliably than the extent of occupationally caused disease. It is clear, though, that coal mining causes disability much more by way of long-latency disease than by traumatic injury. Prime among these diseases is black lung (coal workers' pneumoconiosis, CWP), which still claims some 1,000 fatalities per year despite being down by about half since 1990.<sup>5</sup> Deaths tend to occur after a long progression, resulting in one year of life expectancy being lost on average for these cases. However, many years of impaired breathing and debilitating weakness often precede death, which may not be counted as a mining-related fatality because the ill miner dies from other immediate causes.

Improved dust control requirements have led to a decrease in the prevalence of CWP. Among miners with 20-24 years of work experience, for example, the proportion of examined miners who had positive x-rays decreased from 23.2% in the mid-1970s to 2.2% in the late 1990s.<sup>6</sup> Interestingly, sharp drops in rates occurred at certain times: for workers with 25-29 years of mining experience, the rate fell from 20.2% in the 1987-1991 survey to 5.4% in the 1992-1996

<sup>5</sup> U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, *Work-Related Lung Disease Surveillance Report 2002*, Section 2 (CWP and Related Exposures), DHHS (NIOSH) report no. 2003-111, May 2003.

<sup>6</sup> *Ibid.*

survey; the former cohort began their careers around 1962, the latter around 1967. Under the Federal Coal Mine Health and Safety Act of 1969 (P.L. 91-173), commonly referred to as the Coal Act, tighter dust standards were phased in from 1970 to 1973.

In recent years, however, the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC) found advanced cases of CWP among underground miners younger than 50. This is regarded as particularly troubling because these individuals were exposed to coal dust after the preventive measures in the Coal Act went into effect. The CDC suggested four explanations for the continuing development of advanced pneumoconiosis:

- 1) inadequacies in the mandated coal-mine dust regulations; 2) failure to comply with or adequately enforce those regulations; 3) lack of disease prevention innovations to accommodate changes in mining practices (e.g., thin-seam mining) brought about by depletion of richer coal reserves, and 4) missed opportunities by miners to be screened for early disease and take action to reduce dust exposure.<sup>7</sup>

## The Regulatory Regime

MSHA is charged with overseeing the safety and health of those employed in underground and surface coal mining and in other mining industries (e.g., iron ore, sand and gravel). The agency is mandated to inspect each underground mine at least four times a year and each surface mine twice a year. (Not until FY2008 did MSHA fulfill this mandate. The agency put in place the “100 Percent Plan” in October 2007 to achieve the required inspections of 14,800 active mining operations.)<sup>8</sup> MSHA not only has the authority to assess financial penalties for violations of its authorizing statute, but it also has direct authority to immediately shut down dangerous operations.

### Standards

MSHA regulations, often referred to as standards, cover a wide range of equipment, procedures, certifications and training including methane monitoring, dust control, ventilation, explosives, fire protection, roof support, maps, communications and emergencies. See *Code of Federal Regulations*, Title 30, Chapter 1; coal mines are specifically addressed in Subchapter O.

### Safety

#### *The Mine Improvement and New Emergency Response Act*

In the wake of the Sago accident in January 2006, the agency was criticized for its slow pace of rulemaking, allegedly withdrawing 18 proposed standards that had been pending as of January

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<sup>7</sup> “Advanced Pneumoconiosis Among Working Underground Coal Miners—Eastern Kentucky and Southwestern Virginia, 2006,” *MMWR Weekly*, July 6, 2007.

<sup>8</sup> “MSHA Says 100 Percent Plan Succeeded in Completing All Mandated Mine Inspections,” *Daily Labor Report*, December 15, 2008.

2001.<sup>9</sup> The Bush Administration said in response that it was pursuing a revised agenda,<sup>10</sup> and being more frank by no longer listing long-term projects on which little progress had been made.

Legislative activity undertaken at both the state (e.g., West Virginia, Kentucky, and Illinois) and federal levels in 2006 emphasized factors thought to have played a part in the Sago mine disaster (e.g., emergency oxygen supplies, tracking and communication systems, deployment of rescue teams). The most prominent measure, and the first major revision of federal mine safety legislation since 1977, is the Mine Improvement and New Emergency Response (MINER) Act (P.L. 109-236).<sup>11</sup>

MSHA rulemaking activity started to quicken after enactment of P.L. 109-236 in June 2006. A final rule on emergency mine evacuation went into effect in December 2006. The final regulation includes requirements for increased availability and storage of breathing devices (self-contained self-rescuers, SCSRs), installation and maintenance of escape guides (lifelines) in underground coal mines, and immediate notification of accidents at all mines. In March 2007 (as opposed to the MINER act's deadline of December 2006), MSHA issued another final rule; it raised the civil penalties for all mine safety and health violations, including those specified in the MINER act. The act also set a deadline (December 2007) for MSHA to promulgate new requirements that mine operators must meet concerning rescue teams. In February 2008, MSHA issued a final rule that among other things mandates the hours and frequency of training for mine rescue team members.<sup>12</sup> In response to the D.C. Circuit Court of Appeals invalidating part of the mine rescue team rule in February 2009, MSHA published a final rule in June complying with the court's decision that requires mine-site teams at small mines to train semi-annually rather than annually and state employees on state-sponsored rescue teams to train at small mines semi-annually as well as participate in two mine rescue contests annually rather than one. The MINER act further required MSHA to finalize, by December 2007, a standard for mine seals and increase from 20 pounds per square inch (psi) the horizontal static pressure that a seal could withstand. In April 2008, the agency issued the final rule on sealing of abandoned areas.

Continued congressional dissatisfaction with MSHA's performance following passage of the MINER act in 2006 resulted in inclusion of provisions related to the safety of miners in the Consolidated Appropriations Act, 2008 (P.L. 110-161). Signed in December 2007, this act required the agency to issue a proposed rule (June 2008) and a final rule (December 2008) consistent with the recommendations of the Technical Study Panel on the Utilization of Belt Air that had been established by the MINER act.<sup>13</sup> Within the same time frame, P.L. 110-161 also

<sup>9</sup> Jody Warrick, "Federal Mine Agency Considers New Rules to Improve Safety," *Washington Post*, January 31, 2006, p. A3.

<sup>10</sup> Standards proposed and adopted in the 2001-2005 period include methane testing (alternate means), emergency evacuations, belt entries as air intakes, and training shaft and slope construction workers.

<sup>11</sup> Earlier in the decade, Congress gave MSHA \$10 million to collect and digitize mine maps and new technologies for detecting mine voids (Consolidated Appropriations Resolution, 2003, P.L. 108-7). The Emergency Supplemental Appropriations Act of 2006 (P.L. 109-234) made available \$26 million for MSHA to hire 170 coal mine inspectors above the agency's June 2006 level, and \$10 million for NIOSH to conduct research on new safety technologies.

<sup>12</sup> Relatedly, in September 2008, the agency published a final standard on the equipment that must be contained in mine rescue stations at underground coal and metal/nonmetal mines, and a final standard concerning firefighting equipment in underground coal mines.

<sup>13</sup> Belt air is air directed underground to ventilate active work areas via the same tunnels in which conveyor belts remove coal from mines. Because these tunnels consequently contain a great deal of highly flammable coal dust, some think that using them for ventilation increases the risk of directing fires toward the work areas of miners and toward their evacuation routes.



directed the Secretary of Labor to propose and finalize regulations consistent with the recommendations of NIOSH made pursuant to the MINER act requiring rescue chambers or equally protective refuge facilities in underground coal mines. MSHA met these deadlines for publishing the two standards. After receiving the final report of the study panel on use of belt air in December 2007, MSHA published a final rule concerning fire prevention and detection in connection with conveyor belts in December 2008. The standard requires operators to request agency approval in their mine ventilation plans to use air from belt entries to ventilate working sections of mines, requires airlocks on doors along escape ways, reduces levels of respirable dust at belt entries, and mandates installation of smoke sensors within one year of their approval by MSHA, among other things. In December 2008, as well, MSHA issued a final rule on refuge alternatives and their components (e.g., breathable air, water, first-aid supplies). The rule permits two kinds of refuges, each of which must among other things provide 96 hours of breathable air, allow a minimum 15 square feet of floor space, be located within 1,000 feet of the nearest working face, and have an apparent temperature of 95 degrees Fahrenheit or less. Other refuge alternatives are to be phased out over time. In addition, operators must describe the location of refuge alternatives in their emergency response plans (ERPs), train miners to locate and use refuges, and conduct examinations of refuges and their components before the start of shifts.

The rule on refuge alternatives further requires that they contain a two-way communication facility that is part of the mine communication system. Although such two-way communication systems were not available when the rule was issued in December 2008, MSHA stated that it wants them included in ERPs as mandated by the MINER act. In order for an underground mine operator's plan to be approved, the act imposed a deadline (June 2009) for provision of "post accident communication between underground and surface personnel via a wireless two-way medium," and for provision of "an electronic tracking system permitting surface personnel to determine the location of any persons trapped underground or set forth within the plan the reasons such provisions cannot be adopted." On January 16, 2009, MSHA issued a program policy letter that provides guidance for complying with the post-accident two-way communications and electronic tracking requirements of the MINER act. It notes that because MSHA-approved electronic tracking systems are available, mine operators should provide for them in new and revised ERPs. But,

because fully wireless communications technology is not sufficiently developed at this time, nor is it likely to be technologically feasible by June 15, 2009, ... [n]ew ERPs and revisions to existing ERPs should provide for alternatives to fully wireless communication systems.... While operators and District Managers must consider mine-specific circumstances in determining appropriate two-way communications systems, this guidance outlines the features MSHA believes would best approximate the functional utility and safety protections of a fully wireless system, given the limitations of current technology.

### *Drug and Alcohol Use*

After receiving comments in late 2005 in response to its advanced notice of rulemaking on the use of or impairment from alcohol and drugs on coal mine property, MSHA issued a proposed rule in September 2008. The rulemaking was withdrawn in the regulatory agenda released in fall 2009 based on the comments received and insufficient data about the contribution of alcohol and drug use to accidents. The current MSHA standard prohibiting possession and use of intoxicating drinks and narcotics applies only to surface and underground metal and nonmetal mines (30 C.F.R. Sections 56.20001 and 57.20001). The proposed rule, codified at 30 C.F.R. Subchapter N

(Uniform Mine Safety Regulations), would have extended coverage to surface and underground coal mines.<sup>14</sup>

## Health

### *Personal Dust Monitors*

Controversy has continued for many years about how dust concentrations are measured in mines. After MSHA proposed new regulations in 2000, which were superseded by revised proposals in March 2003, it suspended work on a final rule in June 2003 to obtain information on recently developed continuous personal dust monitors (CPDMs) that NIOSH was testing. CPDMs are a new technology that can give individual real-time readings of dust concentration and help resolve longstanding disputes about how air samples are to be handled. In May 2007, NIOSH's Jeffrey Kohler testified at a hearing of the Subcommittee on Employment and Workplace Safety of the HELP Committee that the institute's research showed miners equipped with CPDMs were able to greatly reduce respirable dust exposure based on having real-time dosimetry.

On January 16, 2009, MSHA published a proposed rule to revise existing requirements for the approval of sampling devices that monitor miner exposure to respirable coal dust. It revises 30 C.F.R. Part 74 by creating performance-based requirements that would permit MSHA and NIOSH to approve the use of CPDMs.<sup>15</sup> The new device, by allowing real-time measurement of the respirable dust to which coal miners are exposed, "offers the best solution for protecting miners from" CWP and silicosis according to MSHA.<sup>16</sup> The rule also updates the design-based requirements for the coal mine dust personal sampler units (CMDPSUs) that have been used since 1970. These devices employ a filter cassette to ascertain the concentration of respirable dust; the cassette is sent to MSHA for processing at the end of a full shift or eight hours, whichever is less.

In April 2010, the final rule was published in the *Federal Register*. It went into effect in June 2010. (On the same day, MSHA also published a final rule revising the agency's electrical safety standard for the installation, use, and maintenance of high-voltage continuous mining machines in underground coal mines. It too became effective in June.)

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<sup>14</sup> The proposed rule generally would have adopted the Department of Transportation's (DOT's) testing program requirements (49 C.F.R Part 40) that call for testing under the following circumstances: pre-employment, random unannounced, post-accident if the employee might have contributed to the accident, and based on reasonable suspicion of an employee having used a banned substance. Like the DOT regulation, the proposed rule would have required the removal from safety-sensitive duties of employees who test positive and their referral to substance abuse professionals. In order to resume performing these job duties, the employees would have to undergo return-to-duty and follow-up testing. The proposed rule further required operators to give violators one chance to obtain help and retain their jobs. The disciplinary consequences for subsequent violations were left up to the mine operator.

<sup>15</sup> By law, NIOSH and MSHA must jointly approve devices to measure respirable dust concentrations in coal mines. MSHA's specific role is to "approve the intrinsic safety of the device, which assures that the device could be operated safely in the potentially explosive atmosphere of an underground coal mine" (74 FR 11, p. 2916).

<sup>16</sup> Department of Labor, Mine Safety and Health Administration, "Coal Mine Dust Personal Monitors, proposed rule," 11 *Federal Register* 2917, January 16, 2009.

### ***Concentration of Respirable Coal Mine Dust***

The above-described rulemaking concerning CPDMs does not address the requirements in 30 C.F.R. parts 70, 71, and 90 about the use of sampling devices (e.g., who, when, and how often). According to the fall 2009 regulatory agenda, MSHA incorporated compliance sampling for respirable coal dust and determination of its concentration into rulemaking on lowering miners' exposure to respirable coal mine dust. MSHA intends to issue a notice of proposed rulemaking (NPRM) on these matters in September 2010. The regulatory agenda also states that the agency will publish an NPRM on miners' exposure to respirable crystalline silica in April 2011.

MSHA is expressly required by its authorizing statute to enforce a dust control standard that reduces the incidence of black lung and silicosis. The (mandatory) permissible exposure limit (PEL) to respirable coal mine dust currently set by regulation is 2 milligrams per cubic meter. In 1995, NIOSH developed a (voluntary) recommended exposure limit (REL) for coal dust of 1 milligram per cubic meter, and for silica dust, 0.05 milligrams per cubic meter.<sup>17</sup> The Secretary of Labor convened an Advisory Committee on the Elimination of Pneumoconiosis Among Coal Mine Workers in 1996, which issued a final report at that time making recommendations to reduce exposure to coal mine dust and silica.

## **Enforcement**

### **Upper Big Branch (UBB) Mine: Contested Penalties and Pattern of Violations**

The increased value of civil penalties promulgated by MSHA in its 2007 rule coincided with employers increasingly appealing cases to the Federal Mine Safety and Health Review Commission (FMSHRC), an independent adjudicatory agency. Operators contested 10,036 out of 135,718 violations of mandatory safety and health standards in 2006, or 7.4%. Contested citations doubled to 15.0% in 2007 (19,546 out of 130,137 violations) and rose again to 23.5% in 2008 (46,792 out of 198,700). While the number of cited violations dropped to 173,928 in 2009, the number contested fell to a much lesser extent (46,526), thereby raising the percentage contested to 26.8%. Similarly, the percentage of proposed dollars assessed being appealed to FMSHRC jumped from 34.8% in 2006 (\$12.2 million out of \$35.1 million) to 54.5% in 2007 (\$40.6 million out of \$74.5 million). The percentage rose still further to 68.9% in 2008 (\$133.8 million out of \$194.2 million). The percentage of dollars assessed being contested fell somewhat in 2009 to 65.8% (\$92.9 million out of \$141.2 million).

Although operators must abate safety and health violations for which they are issued citations, they do not have to pay proposed penalty assessments to the Treasury until an administrative law judge (ALJ) at FMSHRC issues a final order (i.e., renders a decision). Interest is not applied to penalties while a case waits to be heard by an ALJ. In FY2009, the average time from case receipt at FMSHRC to disposition was 319 days and 3,738 cases remained undecided for over one year.<sup>18</sup>

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<sup>17</sup> U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, *Criteria for a Recommended Standard: Occupational Exposure to Respirable Coal Mine Dust*, DHHS (NIOSH) publication no. 95-106, September 1995.

<sup>18</sup> Federal Mine Safety and Health Review Commission, *Congressional Budget Justification FY2011*, p. 19.

The workload of ALJs at FMSHRC has greatly increased since MSHA's civil penalties rule went into effect in 2007. The number of new cases being appealed to the Commission by mine operators almost tripled (from 3,406 to 9,239) between FY2006 and FY2009. The backlog of cases waiting to be heard by ALJs rose ninefold (from 1,589 to 14,213) over the same period, which accounts for the greatly delayed decisions noted above.<sup>19</sup>

The explosion at the UBB mine on April 5, 2010, in which 29 miners lost their lives, brought to public attention the potential implications of the backlog at FMSHRC. Some initially thought that the mine had met MSHA's criteria for issuing a notice of a pattern of violations (POV) before the explosion occurred.<sup>20</sup> But, the citations the UBB mine operator has appealed to FMSHRC kept the mine from meeting the POV notice criteria, which considers only final orders of FMSHRC.<sup>21</sup> If a POV notice had been in effect prior to April 5, an inspector finding a significant and substantial violation of a mandatory safety and health standard would have been required to issue an order to withdraw all workers from the mine section affected by the violation until the cited condition was abated.<sup>22</sup> President Obama has called upon the Secretary of Labor "to streamline the rules for proving that a mining company has committed a pattern of violations."<sup>23</sup>

In testimony given before the House Education and Labor Committee in February 2010, FMSHRC said it was looking at its adjudication system to see where procedures might be streamlined through administrative and rulemaking changes. The Commission is required by section 110(k) of the Mine act, as amended, to approve settlements of contested civil penalties worked out by the parties. In an effort to speed the processing of settlement cases and thereby more quickly issue final orders, FMSHRC developed an interim rule that went into effect in May 2010, which applies to all civil penalty cases except discrimination cases or cases against individuals (sections 105(c) and 110(c), respectively). The rule requires a party filing a motion for ALJ approval of a penalty settlement to include a proposed order (decision) approving the settlement and to certify that it is authorized by the opposing party to represent that the opposing party agrees to the submission of the proposed order; the motion must be filed electronically.<sup>24</sup> Also in May, FMSHRC published a NPRM concerning the replacement of conventional procedures with "simplified proceedings" in some civil penalty cases as a means of streamlining the administrative process (e.g., answers to petitions for assessment of penalty not required; motions eliminated to the extent practicable; rather than discovery, mandatory exchange of documents and a pre-hearing conference among the parties and ALJ to narrow and define the

<sup>19</sup> Federal Mine Safety and Health Review Commission, annual budget justifications from FY2007 to FY2011.

<sup>20</sup> Kimberly Kindy, Steven Nufson, and Ed O'Keefe, "Mines Avoid Crackdowns by Fighting Citations," *The Washington Post*, April 10, 2010, pp. A1, A6.

<sup>21</sup> As of April 5, 2010, 49 of the 82 violations assessed against Upper Big Branch Mine-South in 2008 were still being contested, as were all 179 violations assessed in 2009 and all nine violations assessed through April 5 of this year. When MSHA initially screens mines to see whether a POV may be developing, it looks back over a 24-month period. Those mines that meet all of the initial screening criteria must then fulfill additional criteria developed by MSHA in order to be issued a POV notice. Only citations and orders that are final can be counted toward the 30 CFR Part 104.3 criteria for issuing a POV notice. For additional information, see <http://www.msha.gov/PerformanceCoal/Upper%20Big%20Branch-South%20Mine%20Civil%20Penalty%20Summary.pdf> and <http://www.msha.gov/POV/POVScreeningCriteria.pdf>.

<sup>22</sup> A significant and substantial (S&S) violation is one that could reasonably be expected to lead to a serious injury or illness.

<sup>23</sup> Gayle Cinquegrani, "Streamline Pattern of Violations Rules, Inspect Troubled Mines, Obama Tells Solis and MSHA," *Daily Labor Report*, April 16, 2010.

<sup>24</sup> Federal Mine Safety and Review Commission, "Penalty Settlement Procedures, interim rule with request for comments," *75 Federal Register* 21987, April 27, 2010.

disputed issues). After the pre-hearing conference, an ALJ would conduct a full due process hearing on any issues still in dispute and issue a final order within 60 days. Cases eligible for simplified proceedings generally would have at least one of the following characteristics: total proposed penalty of not more than \$15,000 per docket and not more than \$50,000 per proceeding; no citation or order under sections 104(b), 104(d), 104(e), 105(c), 107(a), 110(b), 110(c), or 111 of the Mine act, as amended; no associated fatalities; a hearing expected to last one day or less.<sup>25</sup>

Relatedly, on June 23, 2010, DOL's Office of the Inspector General (OIG) provided a memo to Joseph Main (MSHA's Assistant Secretary for Mine Safety and Health) advising him that in March 2009, the agency's Coal Mine Safety and Health Administrator had inappropriately told district managers to limit the number of mines considered for placement in POV status to no more than one per field office and no more than three per district.<sup>26</sup> The OIG recommended that MSHA reevaluate the status of the 10 mines that were removed from the POV screening list as a result of the administrator's limit out of concern about the safety and health conditions at those mines. Main subsequently ordered inspections of the mines and stated that MSHA intends to develop new POV criteria.<sup>27</sup>

## Crandall Canyon

After the HELP Committee released *Report on the August 6, 2007 Disaster At Crandall Canyon Mine* and DOL's Office of Inspector General published *MSHA Could Not Show It Made the Right Decision in Approving the Roof Control Plan at Crandall Canyon Mine* in March 2008, and the Chairman of the House Education and Labor Committee issued a memorandum reviewing the committee's investigation of the Crandall Canyon Mine incident in May 2008, MSHA released its accident report on July 24, 2008. Like the University of Utah's *Seismological Report on the 6 Aug 2007 Crandall Canyon Mine Collapse in Utah*, issued in August 2007, MSHA concluded that the seismic activity associated with the mine collapse was not due to a naturally occurring earthquake. Rather,

The extensive pillar failure and subsequent inundation of the section by oxygen-deficient air occurred [on August 6] because of inadequacies in the mine design, faulty pillar recovery methods, and failure to adequately revise mining plans following coal burst accidents [about which MSHA was not notified] within 15 minutes as required by 30 CFR 50.10. [This failure on the operator's part] denied MSHA the opportunity to investigate these accidents and ensure corrective actions were taken before mining resumed in the affected area.<sup>28</sup>

The August 16 accident occurred because rescue of the entrapped miners required removal of compacted coal debris from an entry affected by the August 6 accident. Entry clean-up reduced confining pressure on the failed pillars and increased the potential for additional bursts. Methods for installing ground control systems required rescue workers to travel near

<sup>25</sup> Federal Mine Safety and Review Commission, "Simplified Proceedings, notice of proposed rulemaking," 75 *Federal Register* 28223, May 20, 2010.

<sup>26</sup> <http://www.oig.dol.gov/public/reports/oa/2010/05-10-004-06-001.pdf>.

<sup>27</sup> Gayle Cinquegrani, "MSHA Chief Main Responds to OIG Report Citing Flaws in Pattern of Violations Program," *Daily Labor Report*, July 1, 2010.

<sup>28</sup> MSHA, *Report of Investigation: Fatal Underground Coal Burst Accidents, August 6 and 16, 2007, Crandall Canyon Mine*, July 24, 2008, p. 2 and 3, available at <http://www.msha.gov/Fatals/2007/CrandallCanyon/CrandallCanyonreport.asp>. (Hereafter cited as MSHA, *Report of Investigation*.)

areas with high burst potential.... On August 16, the coal burst intensity exceeded the capacity of the support system.<sup>29</sup>

In addition to failing to provide MSHA the requisite notification of prior bursts, the mine operator (Genwal Resources Inc., GRI) conducted bottom and barrier mining that were not included in the approved roof control plan and that intensified stress on the pillars. GRI also mined in an area that was not part of the approved roof control plan, according to MSHA's report, thereby making conditions more unstable. Further, GRI did not propose revisions to the roof control plan that were sufficient to control bursts. MSHA levied a fine of \$1,340,000 for multiple violations (30 CFR 50.10, 30 CFR 75.203(a), 30 CFR 75.220(a)(1), 30 CFR 75.223(a)) that directly contributed to the fatalities that occurred at Crandall Canyon Mine on August 6, 2007. In connection with 11 other noncontributory violations found during the agency's investigation, it proposed an additional penalty of \$296,664. The total penalties proposed by MSHA against the mine operator amounted to \$1,636,664.<sup>30</sup>

MSHA faulted engineering analyses performed by Agapito Associates, Inc. (AAI) for the mine operator. It issued one enforcement action to AAI for "inaccurately evaluat[ing] the conditions and events at the mine when determining if areas were safe for mining," which "directly contributed to the death of nine people."<sup>31</sup> MSHA fined AAI \$220,000 for violating 30 CFR 75.203(a).

Since 1989, MSHA has carried out internal reviews of its actions after accidents involving at least three fatalities. Because the Assistant Secretary for MSHA and the Administrator for Coal Mine Safety and Health were directly involved during the Crandall Canyon Mine accident and rescue, however, the Secretary of Labor appointed an Independent Review Team (IRT). The IRT's report found many deficiencies on the part of MSHA before the accident, during the rescue operation, and in other areas. For example, the IRT concluded that MSHA, in approving the roof control plan and amendments, did not fulfill its responsibility to ensure they were sufficiently protective of the safety of miners; failed to comply with the MINER act's provisions that it be the primary source of communication with the families of trapped miners, the media, and the public; and "The Agency's increased focus on compliance assistance and special emphasis activities may have impacted its ability to complete required inspections as mandated by the 1977 Mine Act."<sup>32</sup>

MSHA took measures to address some deficiencies noted in the IRT report. The agency, for example, issued a letter to mine operators requesting that detailed information be included in their submittals for approval of complex and/or non-typical roof control plans; sent memoranda, instructions, and checklists to district personnel about approval of complex/non-typical roof control plans and reviews, and about implementation of a standardized roof control plan approval and review process; issued a procedure instruction letter to district personnel on use of technical support assistance during review of roof control plans; and sent a memo requiring that sections in which retreat mining is occurring be inspected at least monthly.<sup>33</sup>

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<sup>29</sup> Ibid., p. 4.

<sup>30</sup> MSHA, "MSHA Levies \$1.85 Million in Fines for Crandall Canyon Mine Disaster," *News Release*, July 24, 2008, available at <http://www.msha.gov/MEDIA/PRESS/2008/NR080724.asp>.

<sup>31</sup> MSHA, *Report of Investigation*, p. 176.

<sup>32</sup> Earnest C. Teaster Jr. and Joseph W. Pavlovich, *Independent Review of MSHA's Actions at Crandall Canyon Mine*, July 21, 2008, p. 5, available at <http://www.msha.gov/CCreview/CrandallCanyonIR.asp>.

<sup>33</sup> MSHA, *Crandall Canyon Accident Investigation: Summary and Conclusions*, available at <http://www.msha.gov/> (continued...)

## Legislative Activity

### 110<sup>th</sup> Congress

#### **The Supplemental Mine Improvement and New Emergency Response Act**

At the time of the MINER act's passage, some Members characterized the law as only a first step that would be followed by more measures. In January 2008, the House passed the Supplemental Mine Improvement and New Emergency Response Act (S-MINER, H.R. 2768) which incorporated language from the Miner Health Enhancement Act (H.R. 2769).

On the health front, the bill would have required NIOSH to transmit to MSHA its recommended exposure limits (RELs) for chemicals and other substances hazardous to miners. MSHA would then have up to 30 days from receipt of the RELs to adopt them as permissible exposure limits (PELs). In addition, NIOSH would have had to submit each year new or revised RELs, and DOL would have had to adopt them within 30 days as PELs.<sup>34</sup> H.R. 2768 also would have required mine operators to adopt NIOSH's RELs of 1 milligram of respirable coal dust and 0.05 milligrams of respirable silica dust per cubic meter of air. To ensure that the coal dust standard was being met, MSHA and mine operators would have sampled the amount of dust in the mine atmosphere using personal dust monitors that provide real-time information to the miners equipped with the devices.

In light of the use of retreat mining in the 2007 Crandall Canyon tragedy, the bill contained provisions that address the practice.<sup>35</sup> For example, mine operators would have been required to have a current pillar extraction or barrier reduction plan approved by MSHA before performing such activities, and the Secretary would have established a special internal review process for plans involving miners working at depths of more than 1,500 feet. The National Academy of Sciences (NAS), in consultation with NIOSH, would have been required to make recommendations about ways to better protect miners during retreat mining and when working at great depths. Section 4 also would have required the NAS to report on ways to protect miners from the risk of lightning strikes near mines, a factor at Sago.

On the issue of enforcement authority at mines in POV status, the bill would have had penalties assessed beyond those already authorized and all workers withdrawn from a mine. It also would have raised the amount of some currently authorized penalties and established a procedure for dealing with operators who fail to pay final assessments. The Secretary would have been required to establish an advisory committee to recommend whether the government should license mines, their operators, and related personnel.

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Genwal/ccSummary.asp and the agency's response to the IRT report available at <http://www.msha.gov/CCreview/MSHAResponsetoCCIR.pdf>.

<sup>34</sup> The Secretary of Labor would have been allowed to review the feasibility of a PEL before it was put into effect if mine operators or miners provided evidence that feasibility might be an issue. If operators or miners provided evidence that an REL issued by NIOSH lacked the specificity needed to serve as a PEL, the Secretary could have deferred implementation until NIOSH recommended a more detailed REL.

<sup>35</sup> When an underground area has been mined of its coal, the coal pillars that have been holding up that area of the mine's roof are pulled to obtain their coal in the opposite direction from which mining originally occurred.

On the issue of rescue, recovery, and incident investigating authority, S-MINER included a requirement that a communications emergency call center be created for coal and other mine operations, staffed and operated 24 hours a day 7 days a week by at least one employee of MSHA. Guidelines for rescue operations also would have had to be developed and disseminated; the guidelines would have delineated lines of authority within MSHA and between the agency, the private sector and state responders.

In addition to MSHA conducting all accident and incident investigations, the bill authorized an independent investigation for incidents involving multiple injuries or deaths, or multiple entrapments. NIOSH would have appointed team members. The bill would not have had these investigations limit the investigative authority of the Chemical Safety and Hazard Investigations Board or the department's inspector general.<sup>36</sup>

Section 7 of the MINER act concerning family liaisons would have been replaced by a requirement that the Secretary designate a full-time permanent employee of MSHA to serve as a family liaison. The designee would, at least in incidents involving multiple miners, serve as the primary communicator with the families of those miners.

H.R. 2768, as amended, would have established a mine safety program fund. Into this account in the Treasury would be deposited mine safety civil penalties and private donations. Sums in the account would have been available for mine safety inspections and investigations only.

President Bush opposed the bill. In a statement of Administration policy issued when the House was preparing to vote on H.R. 2768, the Office of Management and Budget (OMB) stated that the provision requiring MSHA to adopt NIOSH's voluntary RELs as mandatory PELs "would mandate the adoption of potentially hundreds of PELs without any input from stakeholders and without [prior] determination of whether the PEL is economically and technologically feasible." The OMB further said that by allowing entities in addition to MSHA to investigate certain accidents, S-MINER would

undermine the government's ability to hold accountable mine operators who violate mine safety and health regulations since multiple investigations potentially using different methodologies and reaching different conclusions could prejudice the government's ability to prosecute civil or criminal violations of mine safety and health standards that contributed to, or exacerbated, an accident.

## **The Mine Communications Technology Innovation Act**

The House passed the Mine Communications Technology Innovation Act (H.R. 3877/S. 2263) on October 29, 2007. H.R. 3877 would have had the Director of the National Institute of Standards and Technology (NIST) establish a research, development and demonstration program to develop best practices, adapt existing technology, and accelerate development of next generation technology and tracking systems for mine communications. The Department of Commerce's NIST also would have coordinated with industry and relevant federal agencies to develop consensus standards for communications in underground mines.<sup>37</sup>

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<sup>36</sup> The Chemical Safety and Hazard Investigations Board is an independent agency of the federal government that, among other things, investigates and identifies the causes of chemical accidents.

<sup>37</sup> Section 6 of the MINER act created within NIOSH an Office of Mine Safety and Health "to enhance the (continued...)"



## 111<sup>th</sup> Congress

On June 30, 2010, Representatives Miller, Woolsey, and Rahall as well as Senators Harkin, Murray, and Rockefeller released *Proposed Legislative Changes to Protect the Safety of all Workers and Prevent Future Disasters*.<sup>38</sup> A discussion draft of worker safety and health legislation was posted on the Education and Labor Committee's website the same day.<sup>39</sup> It was met with consternation by some members of the Committee on Health, Education, Labor and Pensions.<sup>40</sup>

On July 1, 2010, the Mine Safety and Health Act of 2010 (H.R. 5663) was introduced. The Committee on Education and Labor held a hearing on the bill on July 13.

Among other perceived mine safety and health issues, the bill addresses those that arose from the UBB mine incident and earlier accidents at underground coal mines by

- requiring an independent investigation of accidents involving at least three fatalities or as determined by the Secretary of Health and Human Services;
- defining in statute significant and substantial (S&S) violations;
- changing the POV criteria to include such things as citations for S&S and other specified violations in excess of thresholds established in regulation by the Secretary of Labor;
- for a coal or other mine in POV status, issuing an order requiring the operator to withdraw all persons from the mine, doubling the number of mandated annual inspections, and collecting from mines in POV status fees to establish a Mines in Pattern Status Inspection Fund;
- strengthening whistleblower protections; and
- promulgating regulations requiring underground coal mine operators to install atmospheric monitoring systems that provide real-time readings of methane and carbon monoxide levels.

The bill also aims to make the Mine act's penalty provisions serve as stronger deterrents to unsafe conditions in mines. H.R. 5663 raises the maximum penalty for S&S violations to \$150,000 for

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development of new mine safety technology and technological applications and to expedite the commercial availability and implementation of such technology in mining environments." The statute stated that the NIOSH office is "responsible for research, development, and testing of new technologies and equipment designed to enhance mine safety and health," and to carry out this responsibility it has the authority to award grants to encourage the development and manufacture of mine safety equipment and to award contracts to perform product testing. Separately, the Emergency Supplemental Appropriations Act of 2006 (P.L. 109-234) awarded \$10 million to NIOSH to target research into safety technologies specifically related to communications and tracking, among other things, that would be available for use in mines within 24-36 months.

NIOSH organized a Mine Emergency Communications Partnership "to facilitate the development, evaluation, and implementation of" post-accident communication and tracking technologies. The partnership includes mining associations, unions, state and federal regulatory agencies, equipment manufacturers, and researchers. (For additional information, see <http://www.cdc.gov/niosh/mining/mineract/mineemergencycommunicationspartnership.htm>.)

<sup>38</sup> <http://edlabor.house.gov/documents/111/pdf/publications/20100629MinerSafetyActFivePageOverview.pdf>.

<sup>39</sup> <http://edlabor.house.gov/documents/111/pdf/legislation/MineSafety2010.pdf>.

<sup>40</sup> <http://help.senate.gov/newsroom/press/release/?id=65064aff-1d7d-4665-905d-de50e4540896&groups=Ranking>.

each violation. For mines in POV status that fail to meet performance benchmarks established by the Secretary, the bill doubles the civil penalty for violations of the act found during performance reviews. It also increases criminal penalties (to between \$1,000,000 and \$2,000,000) and length of imprisonment (to between 5 and 10 years) for operators who knowingly violate or fail to comply with orders issued under the act, and makes subject to the same penalties and imprisonment any director, officer, or agent who knowingly authorized or carried out such violation or failure. In addition, persons who retaliate against whistleblowers or who give advance notice of mine inspections could be fined and/or imprisoned under the bill. And, interest would accrue starting when operators contest a citation and 30 days after a final order of the FMSHRC or court is issued; withdrawal orders could be issued for failure to pay civil penalty assessments that have become final orders.

Additionally, H.R. 5663 would amend the Occupational Safety and Health Act by including portions of the Protecting America's Workers Act (H.R. 2067, S. 1580). The bill would, among other things, strengthen whistleblower protections; require employers to correct serious, willful, or repeated violations while contesting citations; raise civil penalties; increase the amount of the penalty if a willful or repeated violation causes or contributes to the death of an employee; and adjust penalties for inflation. Employers who knowingly violate standards, rules, or orders promulgated under section 6 of the act or regulations prescribed under the act, and the violation causes or contributes to an employee's death, shall upon conviction be fined, imprisoned for 10 years at most (20 years if not a first conviction), or both; and employers who knowingly violate standards, rules, or orders promulgated under section 6 of the act or regulations prescribed under the act, and the violation causes or contributes to serious bodily harm but not the death of an employee, shall upon conviction be fined, imprisoned for five years at most (10 years if not a first conviction), or both.

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